

**REMARKS**

Claims 1-13 are all the claims pending in the application.

**I. Preliminary Matters**

The Examiner acknowledges that two copies of the declaration have been submitted. However, the Examiner maintains that the claims to foreign priority in each declaration are not consistent.

Further, the Examiner maintains that the wrong box was checked under the section “Priority Claim 35 U.S.C. § 119 (a)-(d)” on pg 2 of the declaration signed by Dr. Manjunath and Dr. Wu. In particular, the box indicating “such application has been filed as follows” should have been checked, rather than the box indicating, “no such applications have been filed”.

The Applicants respectfully submit a Supplemental Application Data Sheet with the correct information. The Applicants respectfully submit that, the wrong boxes were incorrectly marked in the declaration. In addition, the priority information noted in the Supplemental Application Data Sheet reflects information accurately as it pertains to the present Application.

Further, the Examiner has acknowledged Applicants’ claim for foreign priority based on the application filed in Korea on August 21, 2000. However, the Examiner has indicated that a certified copy of the 2000-48323 application has not been filed, as required by 35 U.S.C. § 119(b). Specifically, the Examiner notes that the filed priority document is not a “blue ribbon” copy.

The Examiner is notified that the Applicants submitted a certified copy of the priority document, thereby satisfying all the requirements for perfecting priority on April 2, 2001. The Applicant attaches a copy of the front page of the certified priority document that was filed.

Also, the Examiner has indicated that the drawings are objected to due to the handwritten correction made to Figure 1. The Applicants submit a corrected version herewith.

## **II. Claim Rejections under 35 U.S.C. § 102**

Claims 1, 7, 12 and 13 are rejected under 35 U.S.C. § 102(e) as being anticipated by Kothuri et al. (U.S. Patent No. 6,381,605).

The present invention requires one or more feature vectors to be concentrated in one or more cells. Further, the hierarchical indexing is performed on the feature vector data space, only when it is determined that one or more cells where one or more feature vectors are concentrated exist.

Kothuri does not disclose such a feature vector space. Further, Kothuri does not disclose (or suggest) one or more cells in which such one or more feature vectors are concentrated. Kothuri discloses hierarchical indexing of multi-dimensional data or multi-attribute data. Even if this data is construed as a feature vector, there is no disclosure related to determining if feature vectors are concentrated in certain cells. The passages referred to by the Examiner discuss constructing a hierarchical index. However, there is no disclosure for determining if the feature vectors (or multidimensional data as in Kothuri) are concentrated in cells, prior to performing

hierarchical indexing. In fact, the entire passage referred to by the Examiner discusses the hierarchical indexing itself without discussing the prior step of determining if feature vectors (or multi-dimensional data) are concentrated in cells.

Even the individual steps in the hierarchical indexing do not refer to determining cells in which feature vectors are concentrated. For example, in step 506 it is determined if the data items fit into one node. If they do not fit, the variance in each dimension is determined. Then a dimension or attribute hierarchy having a greatest variance is selected and the data items sorted in that dimension. This is not believed to be the same as determining “attractor” cells as in the described non-limiting embodiment of the present application. Even if a node is construed to be a cell as the Examiner appears to be doing, the above steps are believed to be significantly different from determining the cells in which feature vectors are concentrated.

The data items in Kothuri are divided into a number of subsets or clusters. This again is believed to be different from determining if feature vectors are concentrated in certain cells. The process of dividing into subsets is repeated such that all the subsets finally fit into individual leaf nodes. As noted above such a division process is not the same as concentrating feature vector into clusters.

Claim 1 should be allowed at least because Kothuri does not disclose (or suggest) performing hierarchical indexing if it is determined that one or more cells with one or more feature vectors concentrated exist. In fact, the purpose of the present invention is to provide a finer indexing for those feature vectors that get concentrated in certain cells. If the data items are simply divided into clusters, as in Kothuri, such finer indexing can not be provided.

Claims 7, 12 and 13 include limitations analogous to the ones discussed above in relation to claim 1. Further, the Examiner does not provide additional arguments for their rejection. Therefore, the arguments discussed above are equally valid.

### **III. Claim Rejections under 35 U.S.C. § 103**

A. Claims 2 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kothuri et al. (U.S. Patent No. 6,381,605) as applied to claims 1, 7, 12, 13 above, and further in view of “2n-Tree Classifiers” in IBM Technical Disclosure Bulletin, Vol. 34, No. 4B, September 1991, pp. 225-228 (hereinafter referred to as IBM-TDB).

Claim 2 is dependant on claim 1. Therefore, the arguments discussed above are equally valid. Further, the secondary reference IBM-TDB is not believed to overcome the deficiency noted above in relation to claim 1.

Claim 9 includes limitations analogous to the ones discussed above in relation to claim 2. Further, the Examiner does not provide additional arguments for their rejection. Therefore, the arguments discussed above are equally valid.

B. Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kothure et al. (U.S. Patent No. 6,381,605) as applied to claims 1, 7, 12, 13 above, and further in view of Massen (U.S. Patent No. 5,809,165).

Claim 3 is dependant on claim 1. Therefore, the arguments discussed above are equally valid. Further, the secondary reference Massen is not believed to overcome the deficiency noted above in relation to claim 1. Further, Massen merely suggests depicting color information as histograms and measuring deviation. However, there is no suggestion for using the histogram to

determine if one or more cells where one or more feature vectors are concentrated exist, as required by claim 3.

C. Claims 4-6, 8, 10, 12-13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kothuri et al. (U.S. Patent No. 6,381,605) as applied to claims 1, 7, 12, 13 above, and further in view of "A Quantitative Analysis and Performance Study for Similarity-Search Methods in High-Dimensional Spaces," *Proceedings of the 24<sup>th</sup> International Conference of Very Large Data Base*, New York, August 1998, pp. 194-205 (Hereinafter referred to as Weber et al.).

Claim 4 is dependant on claim 1. Therefore, the arguments discussed above are equally valid. Further, the secondary reference Weber, which is believed to be cited for its teaching regarding VA-files, is not believed to overcome the deficiency noted above in relation to claim 1.

Claims 5, 6, 8 and 10 11 include limitations analogous to the ones described above. Therefore the above arguments are analogously valid. In addition, the Examiner has not provided additional reasons for their rejection.

D. Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kothuri et al. (U.S. Patent No. 6,381,605) and Weber et al. as applied to claims 4-6, 8, 10 above, and further in view of Massen (U.S. Patent No. 5,809,165) (as applied to claim 3).


Claim 11 includes limitations analogous to the ones described above. Therefore the above arguments are analogously valid. In addition, the Examiner has not provided additional reasons for its rejection.

**IV. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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